without tartaric or phosphoric acid was used, the fluorides were not dissolved in ethanol, and thus the composition was not obtained. However, the composition of the present invention having a copolymer concentration of 40% was obtained by firstly dissolving fluorides in an ethanol solution of tartaric acid or phosphoric acid, and then dissolving the copolymer therein.

Ethanol was used as the non-aqueous volatile solvent in the above experiments. However, solvents disclosed herein other than ethanol behave similarly to ethanol for purposes of this invention.

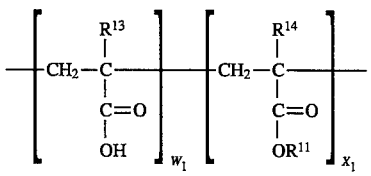
As described in the foregoing, the dental adhesive coating base composition of the present invention does not contain any unreacted monomers which cause deleterious effects on the oral environment. In addition, this composition exhibits strong adhesion to the tooth and retains strong adhesion force to the tooth surfaces even in water or saliva. If this composition is used as a fissure sealant, it may simply be coated on dried surfaces of teeth with a cotton pilot, thereby forming a uniform film on the tooth surfaces. In this respect, the oral composition of the present invention can be applied easily in comparison to the conventional compositions which require polymerization in the mouth. The composition of the present invention has the additional advantage that it warrants high quality since it is free from the problem of deterioration or solidification during storage.

Thus, the oral composition of the present invention has superior adhesion to the tooth and high resistance to water, for a prolonged period of time. In addition, the composition contains fluorine in a stable form so that if it is applied to the surface of teeth, it forms a film from which fluorine acts on the enamel persistently. Therefore, by applying the oral composition of the present invention to the teeth, both caries prevention and increase in the resistance of the teeth can be achieved. As a further advantages, since the fluoride in the oral composition is carried away by saliva only in a small amount, the concentration of fluoride required to be incorporated to attain the caries-preventing effect can be reduced in comparison to the conventional product.

While the invention has been described in detail and with reference to specific examples thereof, it will be apparent to one skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope thereof.

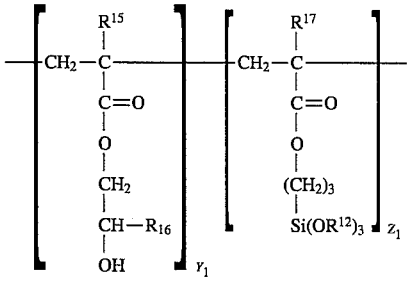
What is claimed is:

1. A dental adhesive coating base composition comprising a copolymer represented by formula (I) in an amount of from 5 to 40 wt % based on the total amount of said dental adhesive coating base composition and a volatile nonaqueous solvent in an amount of from 60 to 95 wt % based on the total amount of said dental adhesive coating base composition:



(I)

-continued



wherein R^{11} represents an alkyl group having from 1 to 10 carbon atoms; R^{12} represents a lower alkyl group having from 1 to 2 carbon atoms provided that three R^{12} groups are the same; R^{13}, R^{14}, R^{15}, R^{16}, and R^{17}, which may be the same or different, each represents a hydrogen atom or a methyl group; W_1 is from 5 to 30 wt %; X_1 is from 20 to 60 Wt%; Y_1 from 20 to 60 wt %; and Z_1 is from 0.2 to 20 wt %; and wherein said copolymer is water-insoluble and soluble in the volatile nonaqueous solvent, and said volatile nonaqueous solvent is ethanol.

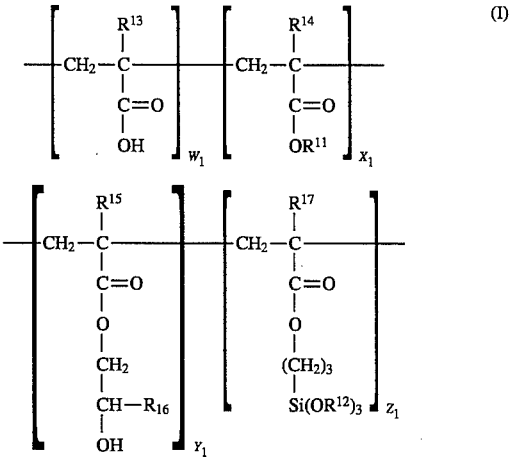
2. A dental adhesive coating base composition as claimed in claim **1**, wherein R^{11} represents a methyl group or a butyl group; R^{12}, R^{14}, R^{15}, and R^{17} each represents a methyl group; and R^{16} represents a hydrogen atom.

3. A dental adhesive coating base composition as claimed in claim **1**, wherein R^{24} represents a methyl group; and R^{21} represents a methyl group or a butyl group.

4. A dental adhesive coating base composition as claimed in claim **1**, wherein the weight average molecular weight of said copolymer represented by formula (I) is in the range of from 1×10^4 to 3×10^5.

5. A dental adhesive coating base composition as claimed in claim **1**, wherein W_1 is from 10 to 20 wt %; X_1 is from 25 to 40 wt %; Y_1 is from 30 to 50 wt %; and Z_1 is from 1 to 10 wt %.

6. A dental coating composition comprising a copolymer represented by formula (I) in an amount of from 5 to 40 wt % based on the total amount of said dental coating composition; at least one of phosphoric acid and tartaric acid are present in said dental coating composition in an amount of from 0.01 to 1 wt % based on the total amount of said dental coating composition, said amount being up to 6 wt % based on the total amount of said dental coating composition; sodium fluoride in an amount effective for dental caries prevention; and a volatile nonaqueous solvent:



(I)

wherein R^{11} represents an alkyl group having from 1 to 10